F U T U R E

R U I N S

DISSEMINATE *PRESERVE* *AMPLIFY* *COLLABORATE*

1

Future Ruins is an emerging programme created as part of the travelling Biennale 2022. It is driven by the concept that verbal storytelling can be both a method of disseminating information and creating connections within communities. The designed element is that of a prototype 'Amphi' nestled within Hollingbury Hill Fort, a Bronze and Roman age site in Sussex. Amphi is derived from the word amphibious, which embodies the structures ability to change dependent on location. The project prototype derives both its material and form from a code, which is formed on four main pillars; to disseminate, preserve, amplify, and to collaborate.

2

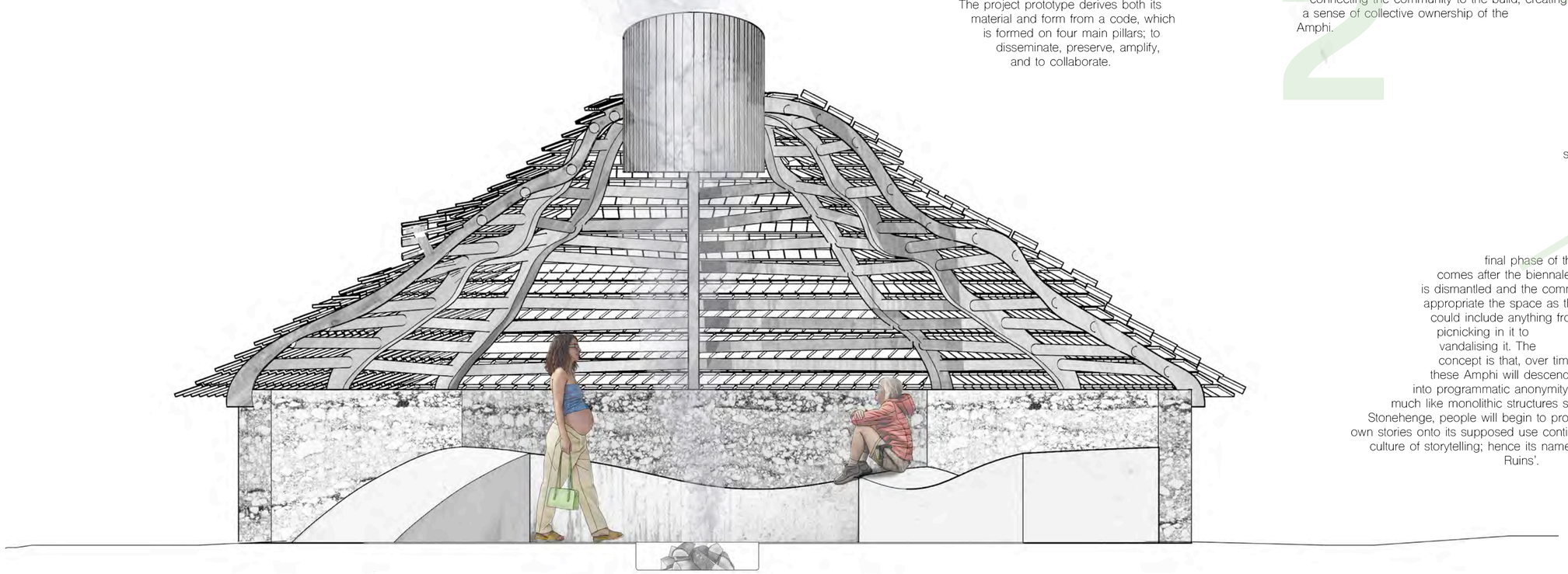
Because the code dictates a vernacular and carbon neutral approach to creating these structures, the result on a global level will be a variety of Amphis, each reflecting the cultural and material landscape around them. Future Ruins is divided into three phases. The first is the construction, local craft experts are employed to both lead in this and disseminate these methods to members of the community. Many heritage craft and construction techniques within England have now been added to a 'red' list, with most of these being carbon neutral it is imperative that we preserve them for future generations. This phase will also act as a way of connecting the community to the build, creating a sense of collective ownership of the Amphi.

3

The second phase is the storytelling sessions which will occur within the time period of the biennale. The community will be invited to come in groups of up to four, where they will be prompted by both the materials within the Amphi, and the landscape around it, to share stories both local and from further afield.

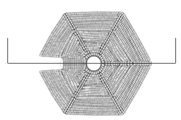
4

The final phase of the Amphi comes after the biennale, when it's roof is dismantled and the community is free to appropriate the space as they please. This could include anything from picnicking in it to vandalising it. The concept is that, over time, these Amphi will descend into programmatic anonymity, much like monolithic structures such a Stonehenge, people will begin to project their own stories onto its supposed use continuing on a culture of storytelling; hence its name 'Future Ruins'.



Fire smoulders from the previous occupants.

1:30 East facing section, Amphi, Hollingbury Hill fort, Brighton. 8am



https://c8.alamy.com/comp/RP4B09/side-view-of-a-female-hiker-sitting-on-a-hill-enjoying-the-view-from-the-top-senior-woman-sitting-relaxed-on-a-rock-after-her-trek-RP4B09.jpg

Paloma Wool CAD model https://eu.palomawool.com

Landscape Model//Material Territories

1

Contour
model demonstrating the
Hollingbury Hill fort landscape.
Because Future Ruins is heavily driven by a
vernacular approach to construction, the
model is informed by
material boundaries within
the site. Each dish
represents a material that is
being used in the construction
of the Amphi.

2

The dishes are
placed in the areas where the Hill Fort is rich
in each material; and indicates where excavation will
take place. Some of these extend
beyond the immediate
boundaries of the Hill
Fort, but are still apart of the
site and Hill Fort woodlands.

3

The acrylic
used in this model was
repurposed from scrap where it would
otherwise have been thrown out.

POSITION OF AMPHI

DEW POND — WATER SOURCE

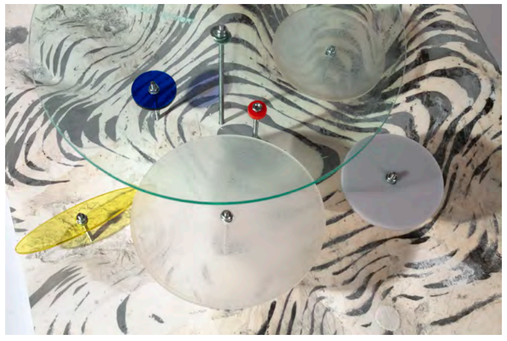
FLINT

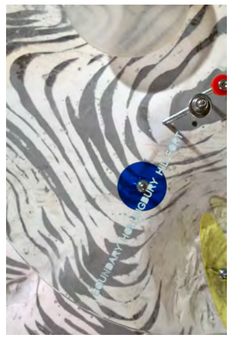
CHALK

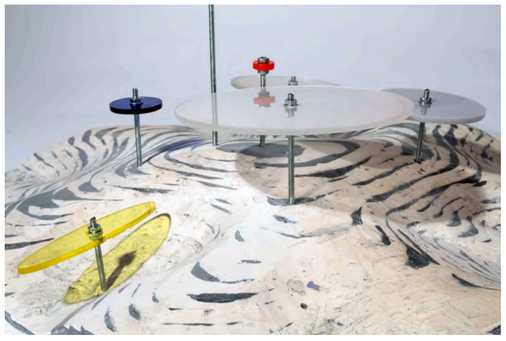
CLAY

HILLFORT BOUNDARY

n







The Circular Approach

1 RICON

Developing new materials whilst staying within the parameters of sustainable practice may appear challenging, but it is the heaviness placed on the word 'new' that needs revaluating here. Amplification of already existing sustainable materials may be the way forward in regards to prototyping and developing alternatives; namely land-based materials that can be combined with bi-product waste. There is an assumption however, that taking natural matter directly from the landscape around us is environmentally damaging, that up-cycling man-made material such as polymers is a more viable option. But more often the processes surrounding re-purposing waste plastic are more detrimental to the environment than sending the product to landfill, especially in regard to getting plastics to play nice with natural bonding agents—or reverting to using cement to mould it into a standard material size .

2

Using land based materials from site, particularly in regard to prototyping and test samples, there is also the temptation to use setting agents or casting materials such as jesmonite or plaster to make the tests more 'successful'. This is a dangerous design rhetoric, that is seen far too often, particularly in eduational institutes. It starts to put more emphasis on pertaining to a certain aesthetic, rather than comitting to creating and prototyping in a way that is truly sustainable—something which admitedly can take substaintially longer than adding large quantities of plaster or jesmonite to a small amount of land based matter. Within model making the use of plasters etc is seemingly more acceptable as models ordinarily aren't made from the intended 1:1 material. But adding it to 'tests' intended to be used at 1:1 negates the intention of making something sustainable.

3

When assessing the material options for the prototype Amphi, chalk was an obvious choice and one which could be amplified through additional material. In order to comply with the material legacy of the code the chalk needed to be amplified in a way which made it portable. Whilst chalk is (currently) sustainable and structurally sound-it cannot be moved once rammed into place. When assessing what materials could be added to strengthen it, it was important to consider the chalks existing chemical make-up. Metals are naturally occurring in chalk, and metal bi-product can be collected from local blacksmiths and waste metal depositories which are plentiful across the South downs.

The material is treated in the same way as normal chalk when ramming, aside from the addition of water in between layers, and water once removed from the former. For a slower reaction the water sprayed after the former is removed can be omitted—the iron will still react to the moisture in the atmoshphere. In it's immediate state it has an appearance similar to corten steel, if this was a desired look it could be further enhances in a more controlled test.

Ricon can be drilled and sawn with both manual and electric tools after ramming. Traditional chalk walls have to be rammed wih formers to create holes, Ricon has the structural integrity to be drilled post-ramming. It's organic facade is can be altered (as seen above and right), by removing 1-2mm off the facade. This reveals a strata of material, that would remain slightly different in each standard piece which is a hommage to the materials completely natural structure.

As oppossed to traditional chalk walls, Ricon can rammed in the same way but with a width as small as 250mm. It is also ideal for ramming non-standard shapes, particularly curves and sharp corners; as seem in the hexagonal design of the Hollingbury Hill Fort Amphi.

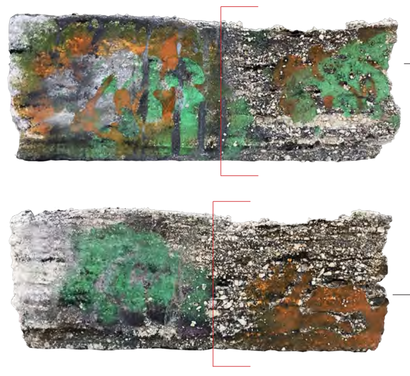
In conjunction with the code, a component or standard piece of amplified material will travel to the next Amphi site, to be impregnated in the build. This is a way of leaving breadcrumbs for future archaeologists to link the Amphi as a interconnecting global collective.

ANCIENT GRAFITTI AND THE DECOMPOSITION OF RICON

Phase 3 of Future Ruins dictates that the Amphi be dismantled to the point where it is safe for the community to appropriate it as they please. It was important to understand how the Ricon would react to physical interactions such as Grafitti. The Ricon exterior is also expected to disintergrate at a faster rate than the interior, this is in accordance with the code; the idea being that the Ricon will return to the land that it came from. So it was also important to understand how the material reacts to large quantities of water, which it would naturally be exposed to over time.

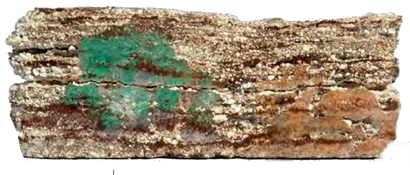
BEFORE EXPOSURE TO WATER:

AFTER EXPOSURE TO WATER:



Half the test remains covered, whilst the other is exposed to water.

Cellulose in the spray paint cures and creates a skin over the chalk it covers. Meaning that it is somewhat protected from the weather.

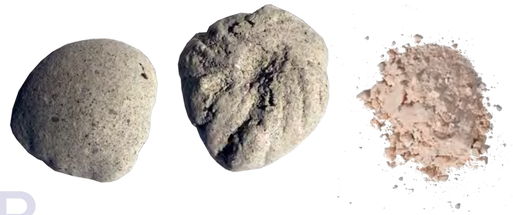


Two weeks after, you begin to see how the grafitti covered parts of the Ricon project outwards.

1

The materials used within the Amphi are all carbon neutral or carbon offset in some way. An attention to the waste produced by methods of construction, has resulted in materials being made from the bi-product produced by other elements of the build.

SLIPPER-CRETE



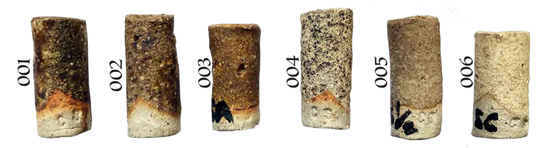
Above: cast slipper-crete. Right: Powder lime made from slipper limpets with the addition of brick dust.

2

Slipper Limpets are an invasive species that arrived in the UK from the Americas. They outnumber oysters on both farmed and wild beds 1:4, wrecking havoc on the ecosystem. Luckily, they are both edible and able to produce quicklime. The process of creating quicklime involves burning the shells to 800 degrees Celsius, when they turn a porcelain white and are fragile to the touch. Waste wood pellets are used during this process, which would have otherwise have been left to rot and emit co 2. This slipper-crete can be mixed with under-burnt shell aggregate to create roof tiles. A similar, more traditional process, of burning chalk to create quicklime is also a technique used in the Amphi build to create the modular seating and archway.

3 ASH GLAZE

This process of burning waste pellets also creates a large quantity of ash, which is then used throughout the build. Firstly, in the ash glazes which were tested by ratio of excavated clay powder from site. The bone coloured glaze 006 was the chosen mix, but may appear different on each floor tile due to the changing chemical make up of ash.



Highest ash to clay powder ratio — Lowest ash to clay powder ratio

Above: Floor tile with ash glaze depicting a chalk figure effigy.

4 ASH & IRON TILES

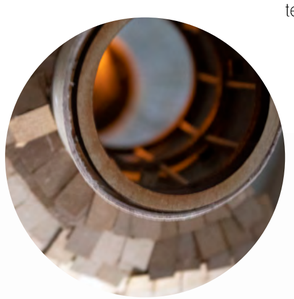
The ash is then also used in the other half of the roof tiles. Re-utilising the metal bi-product to create ash and iron tiles. The ash works as a body, whilst the iron works with the ash to bind together. The iron tend to mirror the material it is cast on and so can appear either shiny or matte. This was a particularly successful test, with the tile ending up structurally sound and fit for use. It would otherwise not have been tried has an assessment not been made on what waste was being produced by the rest of the build.

Above: Test Roof tile, ash and iron.

Ricon Model of Amphi

1

This 1-20 model of the Amphi in Sussex has been primarily used to illustrate and test Ricon's ability to be rammed into shapes normally deemed difficult to construct when using virgin chalk. Whilst constructed at a much smaller scale, the same traditional shuttering and ramming techniques are used as they would be at 1-1. The model has also been created on one board, which represents the site surrounding the Amphi. This it to highlight how the building process may adapt or temporarily change the landscape of the site.



2

The oculus works as both a light source and a chimney, it extends into the Amphi interior and creates a vaccuum from which smoke can escape from the firepit.

3

An interior view of the model. Here you can see the undulating modular benches, these are designed to last longer than the Ricon; so that one day they will appear as monoliths, whilst the amplified chalk has returned to the strata. Tiles with chalk figure effigys cover the floor, these are made from clay sourced onsite and glazed using the waste ash.

4

The exterior archway is put in lieu of a door. This is to adopt a sense of the Amphi being at one with the landscape, and being open to all members of the community. Over-time the archway may break and be propped up and appropriated for other uses—a slide or shelter perhaps.

Phase 3: Amphi Appropriation & Journey to Ruin

This final sequence speculates on what might happen after the Amphi has been dismantled. With the community free to appropriate it as they please, they could introduce urban props, worship in it, vandalise it, or turn it into something fun. The last image depicts the discovery of the Amphi as a ruin in the future, where it has reached full programmatic anonymity and is ready to begin the cycle of storytelling all over again.

5y

South elevation of the Brighton Amphi, Hollingbury Hill fort

25y

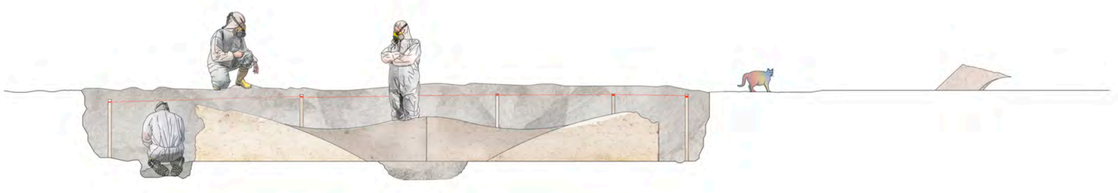
Eastern elevation of the Brighton Amphi, Hollingbury Hill fort

60y

North elevation of the Brighton Amphi, Hollingbury Hill fort

100y

Eastern elevation of the Brighton Amphi, Hollingbury Hill fort



?

South facing section, Dig AE0B44